LEC 15

CSE 121

Array Patterns / Putting It All Together

Questions during Class?

Raise hand or send here

sli.do #cse121

BEFORE WE START

Talk to your neighbors:

What's left on your 2024-25 academic year bucket list?

Music: ♣ CSE 121 25su Lecture Tunes ♣

Instructor: Hannah Swoffer

TAs: Abby, Hannah, Julia, Merav, Trey

Agenda

- **Announcements, Reminders, Final Exam Logistics** ⟵
- PCM Review
- Code Example(s)!

Announcements, Reminders

- R6 released, due Tuesday, August 19th
  - Eligible: **C2**, P2, C3
- P3 released, due *Wednesday, August 20th*
  - Note: you will get feedback *after* R7 & extra resub is due
- Note: all assignments will be eligible for resubmission in R7!
  - R7 due Thursday, August 21st
  - Extra PSW resub due Friday, August 22nd *at 5:00 PM*
- Details about the PSW → Extra Resub posted on Ed!
- Final exam on **Friday, August 22nd from 12:00-1:00 PM** during lecture
  - Wednesday's class will be TA-led final exam review
- Gumball meetup on Wednesday, August 20th from 2:30-4:00 PM near Drumheller fountain!

Evaluations and Awards

Please give us feedback!

- Course Evals are due **Friday, August 22nd at 11:59 PM**

Bob Bandes TA award nominations open!

- thought your TA was the goat? write them a nomination!
- fun fact: some of our faculty won the award when *they* were TAs!

The "Core" of the Final Exam

- In-person, without assigned seating
- Same general logistics as quizzes:
  - On paper
  - We will provide you with one reference sheet, and
  - You may bring one double-sided 8.5 x 11-inch page of notes
- Will have 6 problems, all similar in style to the quizzes
- Focus is on behavior (not code style); minor syntax errors allowed (when unambiguous)
- A *bit* less time per-problem than on a quiz, but the problems are shorter

121's "Exam Review Systems"

- Next week is focused on final exam review and prep
  - next Wed lecture: some strategies & live practice on paper
    - make sure to bring a pencil or pen!
  - next Thu quiz section: *even more* practice
- Several async resources, including:
  - previous quizzes and practice quizzes (very helpful!)
  - many existing section problems
  - multiple previous actual finals on the course website
    - disclaimer: much longer than our final; might look significantly different

Some Miscellaneous Exam Thoughts

- Be very careful about how you use the previous actual finals and practice quizzes
  - Great study resource, but…
  - Hard to "unsee" solutions after looking
  - Use for targeted study, mimic the actual test-taking environment
- Make your own cheatsheet, don't use someone else's!
  - Making the cheatsheet *is* studying
- It is your responsibility to know the policies & procedures
  - Let's take a quick spin of the website page right now :)

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- Announcements, Reminders, Final Exam Logistics
- **PCM Review** ⟵
- Code Example(s)!

(PCM) Why Discuss Array Patterns?

- Arrays are important! This is our fourth lecture covering arrays
- Analogy: tools in toolbox
- Helpful for your future in programming

(PCM) Counting Elements that Meet a Condition

"one"	"two"	"three"	"six"	"seven"	"eight"	"ten"

```
public static int evenLength(String[] list) {
    int countEven = 0;
    for (int i = 0; i < list.length; i++) {
        if (                              ) {
            countEven++;
        }
    }

    return countEven;
}
```

(PCM) Modifying Elements of an Array

4	8	15	16	23	42

```
public static void clamp(int min, int max, int[] list) {
    for (int i = 0; i < list.length; i++) {
        if (          > max) {
                      = max;
        } else if (         < min) {
                      = min;
        }
    }
}
```

(PCM) Searching for an Element

“one"	"two"	"three"	"six"	"seven"	"eight"	"ten"

```
public static int indexOfIgnoreCase(String phrase, String[] list) {
    for (int i = 0; i < list.length; i++) {
        if (                                    ) {
            return i;
        }
    }

    return -1;
}
```

(PCM) Array of Counters

0	1	2	2	0	2

```
public static int[] numCount(Scanner input, int numPrompts) {
    int[] counts =                ;
    for (int i = 0; i < numPrompts; i++) {
        int num = input.nextInt();

                        ;

    }

    return counts;
}
```

(PCM) Analyzing Multiple Elements in an Array (isPalindrome)

0	1	9	1	0

```
public static boolean isPalindrome(int[] list) {
    for (int i = 0; i < list.length / 2; i++) {
        if (list[i] != list[list.length - 1 - i]) {
            return      ;
        }
    }

    return     ;
}
```

(PCM) Shifting Elements

9.6	-88.0	4.815	0.009	7.0184	42.9

```
public static void rotateRight(double[] list) {
    double lastElement = list[list.length - 1];

    for (int i = list.length - 1; i > 0; i--) {
        list[i] = list[i - 1];
    }

                              ;

}
```

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- **Code Example!** ⟵